Wood Products Manufacturing Pollution Prevention Fact Sheet

Utah Department of Environmental Quality

Promoting a Healthy Environment

Introduction

The wood products industry is important in Utah both economically and environmentally. The wood finishing process is a significant source of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). Common HAPs in this industry are: methanol, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, toluene and xylene. As a manufacture of wood products you could now face new clean air regulations. A U.S. Environmental Protection Agency (EPA) standard - the National Emissions Standard for Hazardous Air Pollutants (NESHAP) - is part of a national effort to limit toxic chemicals called HAPs whose emissions can cause adverse health effects. The NESHAP standard requires the application of maximum achievable control technology (MACT) to meet emission limits; for this reason, the NESHAP is generally referred to as a MACT standard. Wood finishing shops must also be concerned about disposal of waste solvents, finishes and rags, which are often considered hazardous waste. In Utah, hazardous wastes are defined and regulated by the Resource Conservation and Recovery Act (RCRA) and the Utah Solid and Hazardous Waste Act. State and Federal hazardous waste regulations contain very specific requirements for managing and labeling of containers that are used to accumulate or store hazardous wastes. Once a manufacturer has determined that a waste is a listed or characteristic hazardous waste, applicable hazardous waste requirements take effect. The container and labeling requirements of RCRA apply to large (> 1000 Kg hazardous waste generated per month) and small (>100 and < 1000 Kg per month) quantity generators.

Through the use of alternative coatings, such as waterborne finishes, and by switching to higher transfer efficiency spray equipment, some manufactures are seeing significant reductions in emissions and seeing savings on disposal and raw material costs.

Benefits of Waste Reduction

Reducing VOCs and HAPs is smart business if you're a wood manufacturer. Just look at the benefits:

- A safe working environment for employees.
- Reduced VOCs and HAPs
- Reduced regulatory compliance burden.
- Savings on materials and disposal costs.
- Marketing advantage of being "environmentally friendly."

This fact sheet describes some of the options available to reduce emissions from wood finishing

manufacturing operations. Many wood finishers use the traditional solvent-borne stains and nitrocellulose lacquers to finish their wood products. VOC and HAP emissions are associated with the spraying and curing process and hazardous waste may be generated as well.

Alternative Finishes

Low VOC finishes may contain either a higher solids content, non-VOC solvent or water. Types of low VOC wood finishes include: high solids coatings, Ultraviolet (UV) curable coatings and waterborne finishes.

Although there are many benefits to using alternative finishes, the process of finding and converting over to alternative coatings takes time. The manufacturer must consider many factors and be willing to alter their processes to successfully implement and alternative coating system.

Alternative Spray Equipment

Another way wood finishers can reduce waste and save money is by increasing transfer efficiency in their operations. Simply stated, *transfer efficiency* measures how much finish makes it from the finish can to the surface being finished. Over spray on the floor or booth filters is considered waste.

To achieve the best transfer efficiency, study the application equipment available and then evaluate equipment performance using the coating material which meets your specifications. Because each application equipment combination has its own characteristics, the advantages and disadvantages must be weighed against the coating specification set for your product. Increase transfer efficiency to match your specified coating film thickness. High transfer spray equipment include: High-Volume/ Low-Pressure, Airless and Air-Assisted systems.

Switching to a higher transfer efficiency spray gun will require employees to learn a new technique and may be difficult for them to adjust. For example, the HVLP guns may spray more slowly than the conventional guns. This will require adjustments by the operator and proper training.

Other Waste Reduction Options

- Laundering Stained Rags
- Optimizing of Cleaning Solvents
- Spray System Adjustments
- Operator Training

For More Information, Contact:

Division of Solid & Hazardous Waste- (801) 538-6170.
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